

Interactive
Comment

Interactive comment on “Binning effects on in-situ raindrop size distribution measurements” by R. Checa-Garcia et al.

R. Checa-Garcia et al.

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This interactive comment and the supplement are signed only by **Dr. Checa-Garcia**.

General comments

I thank the referees for the questions and comments submitted to the AMT Discussion forum. I have included a document in which I reply to the main comments. But also the referees will find new calculations, that I have done, to support the methodologies applied on the study and some asserted conclusions. Thus the submitted manuscript is only a part of the whole research done for this project. Concisely, this supplement also explains the reason for the structure and main hypothesis of the presented manuscript.

Interactive
Comment

I am able to reply to the referee's comments, as those are specific and explicit, therefore I will only address those here. Along the research included on the submitted manuscript, I did not receive any scientific objection from any co-author. I received suggestions from the second co-author. They were focused on refinements of specific argumentations, together with the proposal of use his 2DVD measurements to improve the robustness of this study (and then I designed by myself all the analysis without the participation of any other scientist). No specific issues have been given from any co-author, so it is impossible for me to address any scientific problems unless they are spelled out in some minimum detail.

I thank also to the referees the detailed English comments. I sent a draft of the present manuscript to a *Translation and Editing English service*, but with the limited salary of a PhD student further refinements were quite expensive, and I already spent one month salary on this manuscript. Therefore I sincerely appreciate the specific comments on the English by the referees and second co-author.

Specific comments

A) I would like also to point that a complementary study which includes *measurement errors* was already presented on the reference,

R. Checa-Garcia, *First measurement of the small-scale spatial variability of the rain-drop size distribution: Results from a crucial experiment and maximum entropy modelling*. PhD thesis dissertation, Univ. of Castilla-La Mancha, Spain, 2012. (<http://arxiv.org/abs/1306.5649>).

Therefore, I recommend to referees, readers and *co-authors* to read in detail the chapter related with this manuscript: *Discretization processes analysis of disdrometric measurements* because some of the questions raised on the interactive comments may be already addressed there.

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Interactive Discussion

Discussion Paper



Also additional research was done by Dr. Checa-Garcia outside his PhD Thesis and a small selection of the results are included on the submitted supplement.

AMTD

7, C813–C815, 2014

Interactive
Comment

B) Very important to avoid confusion for readers, referees and *co-authors*, I would like to indicate that there are *only* two sources of information on this paper: simulated drop-size distributions generated artificially by computer, and measurements from the MC3E experiment (2DVD disdrometers) located at Oklahoma. No other data-set is used along this paper, in particular there is no use of OTT Parsivel disdrometers from any network of instruments. Concerning the MC3E experiment only the results coming from one instrument (internally, called sn25) has been presented on this research, while the reference to the NASA data-set used on this paper is included according to the NASA requirements and approved by the second co-author. This point also replies to the questions raised concerning co-authorship, as no other scientist was involved in this study beyond the already included as co-authors.

Please also note the supplement to this comment:

<http://www.atmos-meas-tech-discuss.net/7/C813/2014/amtd-7-C813-2014-supplement.pdf>

Interactive comment on *Atmos. Meas. Tech. Discuss.*, 7, 2339, 2014.

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